

Analysis of more than 1.5 million people finds meat consumption raises mortality rates

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Clinical Question:

Does meat consumption affect mortality?

Evidence: All-cause mortality is higher for increased daily consumption of red meat, especially processed meat. However, the compiled evidence does not link other meat products to all-cause mortality.

Recommendation: Physicians should encourage patients to limit animal products when possible, and substitute red meat and processed red meat with plant-based foods. Patients may supplement a plant-based diet with moderate amounts of fish, poultry, eggs, and dairy if desired.

Evidence shows that physicians should encourage patients to limit animal products when possible and substitute red meat and processed red meat with plant-based foods. Credit: The *Journal of the American Osteopathic Association*

A review of large-scale studies involving more than 1.5 million people

found all-cause mortality is higher for those who eat meat, particularly red or processed meat, on a daily basis. Conducted by physicians from Mayo Clinic in Arizona, "Is Meat Killing Us?" was published today in the *Journal of the American Osteopathic Association*.

The authors analyzed six studies that evaluated the effects of [meat](#) and vegetarian diets on mortality with a goal of giving primary care physicians evidence-based guidance about whether they should discourage patients from eating meat. Their recommendation: physicians should advise patients to limit animal products when possible and consume more plants than meat.

"This data reinforces what we have known for so long - your diet has great potential to harm or heal," said Brookshield Laurent, DO, assistant professor of family medicine and clinical sciences at New York Institute of Technology College of Osteopathic Medicine. "This clinical-based evidence can assist physicians in counseling patients about the important role diet plays, leading to improved preventive care, a key consideration in the osteopathic philosophy of medicine."

While findings for U.S. and European populations differed somewhat, the data found the steepest rise in mortality at the smallest increases of intake of total red meat. That 2014 study followed more than one million people over 5.5 to 28 years and considered the association of [processed meat](#) (such as bacon, sausage, salami, hot dogs and ham), as well as unprocessed red meat (including uncured, unsalted beef, pork, lamb or game).

Table 2.
Statistically Significant Increase in Mortality
With Increased Meat Intake

Increased Mortality	Meat Category			
	Red	Processed	White	Total ^a
All Cause				
Larsson and Orsini ¹	Yes	Yes	NA	NA
Abete et al ²	No	Yes	No	No
Singh et al ³	Yes	Yes	No	NA
Cardiovascular Disease				
Abete et al ²	Yes	Yes	No	No
Singh et al ³	Yes	Yes	Yes ^b	NA
Ischemic Heart Disease				
Abete et al ²	No	No	No	No
Cancer				
Singh et al ³	Yes	Yes	No	NA

- ^a Only the article by Abete et al² evaluated the effects of total meat defined as white processed and unprocessed red meat. The other studies combined red and processed meat at times, but these combinations are not reflected in this table.
- ^b Singh et al³ reported a statistically significant increase in cardiovascular disease mortality among men but not among women.

Abbreviation: NA, not applicable.

Despite variability in the data, the evidence is consistent that increased intake of red meat, especially processed red meat, is associated with increased all-cause mortality. Credit: *The Journal of the American Osteopathic Association*

A 2014 meta-analysis examined associations with mortality from cardiovascular disease and [ischemic heart disease](#). In that study of more than 1.5 million people, researchers found only processed meat significantly increase the risk for all-cause mortality.

Combined, the findings of these studies are statistically significant in their similarity, the reviewers noted. Further, a 2003 review of more than 500,000 participants found a decreased risk of 25 percent to nearly

50 percent of all-cause [mortality](#) for very low meat intake compared with higher meat intake.

They also found a 3.6-year increase in life expectancy for those on a vegetarian diet for more than 17 years, as compared to short-term vegetarians.

More information: Heather Fields et al, Is Meat Killing Us?, *The Journal of the American Osteopathic Association* (2016). [DOI: 10.7556/jaoa.2016.059](#) Heather Fields et al. Is Meat Killing Us?, *The Journal of the American Osteopathic Association* (2016). [DOI: 10.7556/jaoa.2016.059](#)

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